



ELECTRICAL CONDUIT FIELD SECTION 1060

1060.1 Scope. To establish procedures for the inspection, sampling, and reporting of zinc coated rigid steel conduit, intermediate metal conduit, rigid aluminum conduit, zinc coated electrical metallic tubing, rigid nonmetallic conduit and fittings to be used as a raceway for wires and cables of an electrical system.

1060.2 Apparatus.

- (a) Scales or balance accurate to within 0.5 percent of the weight [mass] of the sample to be weighed.
- (b) Rule with suitable graduations to accurately measure the material to be inspected.
- (c) Micrometer or vernier caliper capable of measuring to 0.001 in. [0.0254 mm].
- (d) Magnetic gauge, reading range 0-40 mils [0-1000 μ m].

1060.3 Procedure.

1060.3.1 Rigid Metallic Conduit and Tubing. Conduit and tubing are to be inspected for compliance to the specified ANSI or UL standard. Regardless of the type of conduit or tubing, the material shall be examined visually both on the exterior and interior surfaces to determine if the product is free from slivers, burrs, scale, or other similar injurious defects (or a combination thereof), and if coverage of coating, if required, is complete. Conduit or tubing shall have a circular cross-section sufficiently accurate to permit the application of approved couplings and fittings and the wall thickness shall be uniform throughout. If zinc coating is required, the conduit or tubing shall be thoroughly and evenly coated with metallic zinc applied directly to the surface of the steel so that metal-to-metal contact and galvanic protection against corrosion are provided. The interior surface shall be protected by a zinc, enamel, or other suitable corrosion-resistant coating as required. Weights [masses], dimensions, identification, and coating requirements of the various types of conduit shall be inspected.

1060.3.1.1 Rigid steel conduit, zinc coated. The visual inspections noted in paragraph 1060.3.1 of this Section shall be performed. The inspector shall examine the conduit, nipples, and elbows to insure that they are identified with the manufacturer's name and trade-mark and the words "Rigid Metal Conduit" except that close-threaded nipples need not be so identified. The conduit and couplings shall be inspected for dimensions and weight [mass] to determine conformance with the requirements of ANSI C80.1. Ten unit lengths of conduit with couplings attached shall be weighed to determine conformance with the weight [mass] requirements of conduit. A sample of conduit for each size and manufacturer shall be obtained and submitted to the Laboratory for the determination of weight [mass] of zinc coating. The weight [mass] of zinc coating of couplings shall be determined in the Field with a magnetic gauge, in accordance with ASTM E376. Reference should also be made to [Field Sec 1043.3](#) of this Manual for additional information on the proper use of the magnetic gauge. No laboratory samples of couplings are required.

1060.3.1.2 Intermediate Metal Conduit and Fittings. The visual inspection noted in Paragraph 1060.3.1 of this Section shall be performed. The inspector shall examine the conduit and fittings to insure that they are identified with the manufacturer's name or trade-mark and the words "Intermediate Metal Conduit" or abbreviation "IMC." and "Not for Use in Hazardous Locations" in accordance with Underwriters Laboratories Standard UL 1242. The conduit and fittings shall be inspected for dimensions to determine conformance with the



requirements of UL 1242. A sample of conduit for each size and manufacturer shall be obtained and submitted to the Laboratory for the determination of weight [mass] or zinc coating. The weight [mass] of zinc coating of fittings shall be determined in the field with a magnetic gauge in accordance with ASTM E376. Reference should also be made to Field Sec 1043.3 of this Manual for additional information on the proper use of the magnetic gauge. No laboratory samples of fittings are required.

1060.3.1.3 Rigid aluminum conduit. The contractor shall furnish a manufacturer's certification showing typical test results representative of the conduit and certifying that the material supplied conforms to all of the requirements specified. These certifications shall be carefully examined by the inspector to insure that the certifications are applicable and show compliance with the specification. The visual inspection noted in paragraph 1060.3.1 of this Section shall be performed. The inspector shall examine the conduit, nipples, and elbows to insure that they are identified with the manufacturer's name or trademark and the words "Rigid Aluminum Conduit" or "Rigid Metal Conduit", except that close-threaded nipples need not be so identified. Ten unit lengths of conduit with couplings shall be weighed and the dimensions checked for conformance with the requirements of ANSI C80.5. No Laboratory samples are required.

1060.3.1.4 Electrical metallic tubing zinc coated. The visual inspection noted in paragraph 1060.3.1 of this Section shall be performed. The inspector shall examine the tubing to insure that the pieces are identified by the marking "EMT", indented on the exterior surface of the tubing at intervals of not more than 3 feet [900 mm]. The letters shall not be less than 1/8 in. [3 mm] high and shall be so applied that at least one marking in each 10 ft. [3000 mm] length of straight tubing will be visible when viewed from the side and with the tube in any position of rotation about its own axis. In addition, the lengths of electrical metallic tubing shall be marked with the manufacturer's name or trademark. The tubing shall be inspected for dimensions and weight [mass] determine conformance with the requirements of ANSI C80.3. Approximately 100 linear feet [300 linear meters] of tubing shall be weighed to determine conformance with the weight [mass] requirements. A sample of each size and manufacturer shall be obtained and submitted to the Laboratory for the determination of weight [mass] of zinc coating.

1060.3.1.5 Fittings for Rigid Metal Conduit and Electrical Metallic Tubing. Individual fittings shall be visually inspected as noted in paragraph 1060.3.1 conduit and certifying that the material supplied conforms to all of the requirements specified. These certifications shall be carefully examined by the inspector to insure that the certifications are applicable and show compliance with the specification. The visual inspection noted in paragraph 1060.3.1 of this Section shall be performed. The inspector shall examine the conduit, nipples, and elbows to insure that they are identified with the manufacturer's name or trademark and that words "Rigid Aluminum Conduit" or "Rigid Metal Conduit", except that close-threaded nipples need not be so identified. Ten unit lengths of conduit with couplings shall be weighed and the dimensions checked for conformance with the requirements of ANSI C80.5. No Laboratory samples are required.

1060.3.1.6 Sampling. Samples of conduit or tubing for determination of weight [mass] of zinc coating shall consist of one piece not less than 2 in. [50 mm] in length cut not less than 6 in. [150 mm] from the end of the conduit or tubing. If test results fail to comply with specification requirements, two additional samples shall be obtained for retest. If either of these samples do not comply, the lot represented will be rejected. Form T-739 is to be used both as an identification form for submitting samples to the Laboratory and as a report form. If a sample is submitted to the Laboratory for testing, a completed and signed Form T-739 showing the results of tests performed in the field must accompany the sample. In lieu of sampling, it will be permissible to accept small quantities of material based on field tests providing an acceptable manufacturer's certification is provided by the contractor showing typical test results representative of the material and certifying that the material complies with the requirements specified.



1060.3.2 Rigid Nonmetallic Conduit. The inspector shall measure physical dimensions as shown in the Underwriter's Laboratories Standards to verify the accuracy of the certifications. No laboratory samples are required.

1060.3.2.1 PVC (polyvinyl chloride) conduit, bends, couplings, and fittings are to be inspected for compliance with the requirements of Underwriters' Laboratories Standard UL 651.

1060.3.2.2 PE (Polyethylene) conduit, bends, couplings, and fittings are to be inspected for compliance with the requirements of Underwriters' Laboratories Standard UL 651A, High-Density PE Conduit (HDPE).

1060.3.2.3 Bituminous Impregnated-Fiber conduit, bends, couplings, and fittings are to be inspected for compliance with the requirements of Underwriters' Laboratories Standard UL 543, Type II.

1060.3.2.4 Fiberglass conduit, bends, couplings, and fittings are to be inspected for compliance with the requirements of Specification Sec Underwriters' Laboratories Standard UL 651A, Type HDPE.

1060.3.2.5 The contractor is required to furnish a manufacturer's certification, in triplicate, certifying that the material supplied conforms to the requirements specified. The inspector is to examine the certifications to insure they are applicable.

1060.4 Report. If the material is accepted on the basis of field tests and certification, SiteManager shall be used for reporting. The form shall show all pertinent information regarding the material and the certification shall be retained in the district office. The report is to indicate acceptance, qualified acceptance, or rejection. Appropriate remarks, as described in [General Sec 7.1.2](#) of this Manual, are to be included in the report to clarify conditions of acceptance or rejection.

Distribution of reports for materials purchased under a Department purchase order is to be as described in [Field Sec 2001](#) of this Manual.

